IDAHO CONTENT STANDARDS
MATHEMATICS OF PERSONAL FINANCE
MATHEMATICS

Students are expected to know content and apply skills from previous grades.

Mathematical reasoning and problem solving processes should be incorporated throughout all mathematics standards. Students should use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models to communicate mathematical information and to explain mathematical reasoning and concepts.

Standard 1: Money Management

Goal 1.1: Understanding and using effective money management

Objective(s): By the end of Mathematics of Personal Finance, the student will be able to:

MPF.1.1.1 Analyze account statements for accuracy and reconcile a checking/debit account.

Skill Statements:

a. Apply number sense to everyday situations and judge reasonableness of results.
b. Identify that error accumulates in a computation when there is rounding.
c. Apply properties of rational numbers.
d. Use positive and negative numbers, fractions, decimals, and percentages including application in real-world situations.

MPF.1.1.2 Construct a cash flow statement.

Skill Statement:

a. Perform operations with rational numbers.

MPF.1.1.3 Create, balance and use a personal budget including fixed and variable expenses including analyzing past expenses and income patterns.

Skill Statements:

a. Perform operations with rational numbers.
b. Use appropriate procedures to solve multi-step, first-degree equations and inequalities; such as $3(2x – 5) = 5x + 7$ or $3(2x – 5) > 5x + 7$.
c. Use appropriate procedures to solve linear systems of equations involving two variables; such as $x + y = 7$ and $2x + 3y = 21$.
d. Make predictions and draw conclusions based on statistical measures.
e. Interpret and use basic statistical concepts, including mean, median, mode, range, and distribution of data, including outliers.
f. Use logic to make and evaluate mathematical arguments.

Goal 1.2: Making responsible consumer choices

Objective(s): By the end of Mathematics of Personal Finance, the student will be able to:

MPF.1.2.1. Create and analyze short term goals for disposable income (ex. calculate the necessary income to maintain or improve upon current standards of living, recreation, vacation, gifts, appliances)

Skill Statements:

a. Use appropriate tools/technology to conduct simulations and employ graphical models to make predictions or decisions based on data. (352.05.a)
b. Given graphs, charts, ordered pairs, mappings, or equations, determine whether a relation is a function.
c. Evaluate functions written in functional notation

MPF.1.2.2. Analyze how inflation affects financial decisions (ex investments, purchasing power).

a. Use graphs and sequences to represent and solve problems. (347.02.b)
a. Predict outcomes by applying exponential growth and decay.
a. Use appropriate tools/technology to conduct simulations and employ graphical models to make predictions or decisions based on data. (352.05.a)

MPF.1.2.3. Calculate and compare different types of insurance costs (life, auto, health, deductibles, co-pay, stop-loss, inclusions, exclusions, factors that affect rates).

a. Evaluate functions written in functional notation.
a. Analyze and interpret tables, charts, and graphs, including scatter plots and multiple broken line graphs.
a. Make predictions and draw conclusions based on statistical measures. (352.05.a)
a. Interpret and use basic statistical concepts, including mean, median, mode, range, distribution of data, and outliers.

MPF.1.2.4. Compare and contrast renting or leasing vs. purchasing of an asset (ex automobile)

a. Use positive and negative numbers, fractions, decimals, and percentages including application in real-world situations. (347.01.a)

MPF.1.2.5. Calculate appreciation and depreciation of assets over time

a. Evaluate functions written in functional notation
a. Analyze and interpret tables, charts, and graphs, including scatter plots and multiple broken line graphs. (352.01.a)
a. Make predictions and draw conclusions based on statistical measures. (352.05.a)
a. Interpret attributes of linear relationships such as slope, rate of change, and intercepts MPF.4.4.2 Represent linear relationships using tables, graphs, and mathematical symbols
a. Use positive and negative numbers, fractions, decimals, and percentages including application in real-world situations. (347.01.a)

Goal 1.3 Credit and Debt

MPF.1.3.1. Compare the costs associated with various types of credit. (ex credit cards, installment credit, revolving credit, mortgages, pay day loans, automobiles, student loans, home equity)

- MPF.1.3.1.a. Model and solve real-world phenomena using multi-step, first degree, single variable equations and inequalities, linear equations, and two-variable linear systems of equations.
- MPF.1.3.1.b. Use appropriate procedures for manipulating and simplifying algebraic expressions involving variables, integers, and rational numbers. (350.02.a)
- MPF.1.3.1.c. Apply concepts of rates and direct and indirect measurements.
- MPF.1.3.1.d. Use rates, ratios, proportions, map scales, and scale factors (one- and two-dimensional) in problem-solving situations. (349.03.a)
- MPF.1.3.1.e. Use positive and negative numbers, fractions, decimals, and percentages, including application in real-world situations. (347.01.a)
- MPF.1.3.1.f. Apply properties of exponents. (347.01.c)
- MPF.1.3.1.g. Analyze and interpret tables, charts, and graphs, including scatter plots, and multiple broken line graphs. (352.01.a)

MPF.1.3.2. Compute the total cost of various types of credit (ex credit cards, installment credit, revolving credit, mortgages, pay day loans, automobiles, student loans, home equity, repayment options).

- MPF.1.3.2.a. Use positive and negative numbers, fractions, decimals, and percentages including application in real-world situations.
- MPF.1.3.2.b. Use rates, ratios, proportions, map scales, and scale factors (one- and two-dimensional) in problem-solving situations. (349.03.a)
- MPF.1.3.2.c. Use appropriate tools/technology to conduct simulations and employ graphical models to make predictions or decisions based on data. (352.05.a)

MPF.1.3.3. Interpret credit reports and analyze the financial implications of credit scores. (ex credit reports, credit scores, and debt ratios)

- MPF.1.3.3.a. Use positive and negative numbers, fractions, decimals, and percentages including application in real-world situations. (347.01.a)
- MPF.1.3.3.b. Analyze and interpret tables, charts, and graphs, including scatter plots, and multiple broken line graphs. (352.01.a)
- MPF.1.3.3.c. Use appropriate tools/technology to conduct simulations and employ graphical models to make predictions or decisions based on data. (352.05.a)

<u>Standard 2</u>: Saving and Investment

Goal 2.1: Implement a diversified saving and investment strategy

Objective(s): By the end of Mathematics of Personal Finance, the student will be able to:

MPF.2.1.1. Apply and analyze financial strategies to create wealth and build assets including use of tax deductions and shelters (ex time value of money, investment options) (ex lottery, inheritance, stock market)

MPF.2.1.1.a. Model and solve real-world phenomena using multi-step, first degree, single variable equations and inequalities, linear equations, and two-variable linear systems of equations. (353.01.a)

MPF.2.1.1.b. Represent mathematical relationships using variables, expressions, linear equations and inequalities. (350.01.a)

MPF.2.1.1.c. Interpret attributes of linear relationships such as slope, rate of change, and intercepts.

MPF.2.1.1.d. Collect, organize, and display data in tables, charts, and graphs. (352.02.a)

MPF.2.1.2. Compare investment alternatives based on risk, return, and liquidity. (ex Certificates of Deposit, bonds, stocks, money market accounts, mutual funds, real estate)

MPF.2.1.2.a. Solve exponential and logarithmic equations.

MPF.2.1.2.b. Evaluate functions written in functional notation

MPF.2.1.2.c. Identify positive and negative correlations.

MPF.2.1.3. Evaluate the effect of compounding earned interest

MPF.2.1.3.a. Predict outcomes by applying exponential growth and decay.

MPF.2.1.4. Create a model for comparing savings and investment results using appropriate technology (ex graphing or internet calculator)

MPF.2.1.4.a. Use appropriate tools/technology to conduct simulations and employ graphical models to make predictions or decisions based on data. (352.05.a)

<u>Standard 3</u>: Education Employment and Income

Goal 3.1: Understand the relationship between education, income, career, and desired lifestyle

Objective(s): By the end of Mathematics of Personal Finance, the student will be able to:

MPF.3.1.1. Explain how income reflects choices made about jobs, careers, education, and skill development

MPF.3.1.1.a. Use logic to make and evaluate mathematical arguments.

MPF.3.1.1.b. Analyze and interpret tables, charts, and graphs, including scatter plots, and multiple broken line graphs.

MPF.3.1.2. Calculate and compare how sources of income affect lifestyle choices and spending decisions. (ex. Wage commission, welfare/transfer payments, Medicaid, alimony, bonuses, inheritance, trusts, annuities, self employment, non-profit, public sector, private sector)

MPF.3.1.2.a. Apply properties of rational numbers.

MPF.3.1.2.b. Use positive and negative numbers, absolute value, fractions, decimals, percentages, and scientific notation, including application in real-world situations. (347.01.a)

MPF.3.1.3. Calculate gross versus net income and the value of benefits. (ex payroll deductions and benefits, commissions, tips, taxes, FLEX plans, profit sharing, exemptions, 401 (k), 403 (b) and other related plans)

MPF.3.1.3.a. Apply properties of rational numbers.

MPF.3.1.3.b. MPF.1.1.2 Use positive and negative numbers, absolute value, fractions, decimals, percentages, and scientific notation, including application in real-world situations. (347.01.a)

MPF.3.1.3.c. MPF.3.5.2 Evaluate functions written in functional notation

<u>Standard 4</u>: Taxation

Goal 4.1: Understand the purposes, roles, and responsibilities related to taxation

Objective(s): By the end of Mathematics of Personal Finance, the student will be able to:

MPF.4.1.1. Compare the returns of taxable investments with those that are tax-exempt or tax-deferred, including traditional IRA vs. Roth IRA.

a. Analyze and interpret tables, charts, and graphs, including scatter plots and multiple broken line graphs (352.01.a)

a. Interpret attributes of linear relationships such as slope, rate of change, and intercepts.

MPF.4.1.2. Complete sample tax forms (ex Understanding Taxes by the IRS, forms such as 1040EZ, W-2, W-4 and 1099)

a. Apply properties of rational numbers.

a. Use positive and negative numbers, absolute value, fractions, decimals, percentages, and scientific notation, including application in real-world situations. (347.01.a)

a. Analyze and interpret tables, charts, and graphs, including scatter plots, and multiple broken line graphs (352.01.a)

a. Use appropriate tools/technology to conduct simulations and employ graphical models to make predictions or decisions based on data. (352.05.a)

MPF.4.1.3. Analyze the application and impact of various forms of taxation on individuals, families, and public agencies (estate tax, inheritance tax, luxury tax, sales taxes, property taxes, usage tax, etc.).

a. Apply properties of rational numbers.

a. Use positive and negative numbers, absolute value, fractions, decimals, percentages, and scientific notation, including application in real-world situations.

a. Analyze and interpret tables, charts, and graphs, including scatter plots, and multiple broken line graphs.